

ACE

AMPEX COMPUTERIZED EDITING



AMPEX

ACE: Excellence in Editing

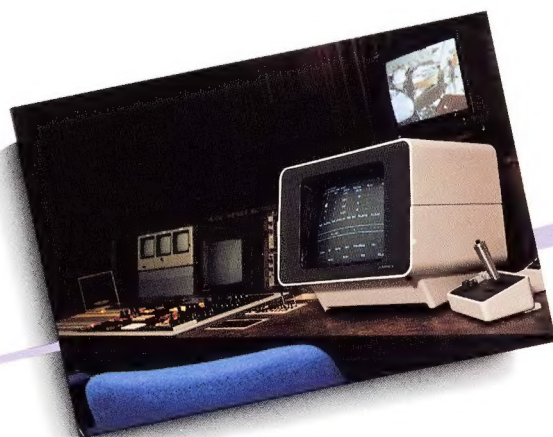
In editing suites everywhere, Ampex Computerized Editing (ACE) systems have gained a reputation as extremely fast, exceptionally user-friendly editing systems. Many of the most creative editors in the business attest to its easy, trouble-free operation. All this because ACE is truly a state-of-the-art system, using high level computer language and distributed processing techniques to provide creative power and flexibility.

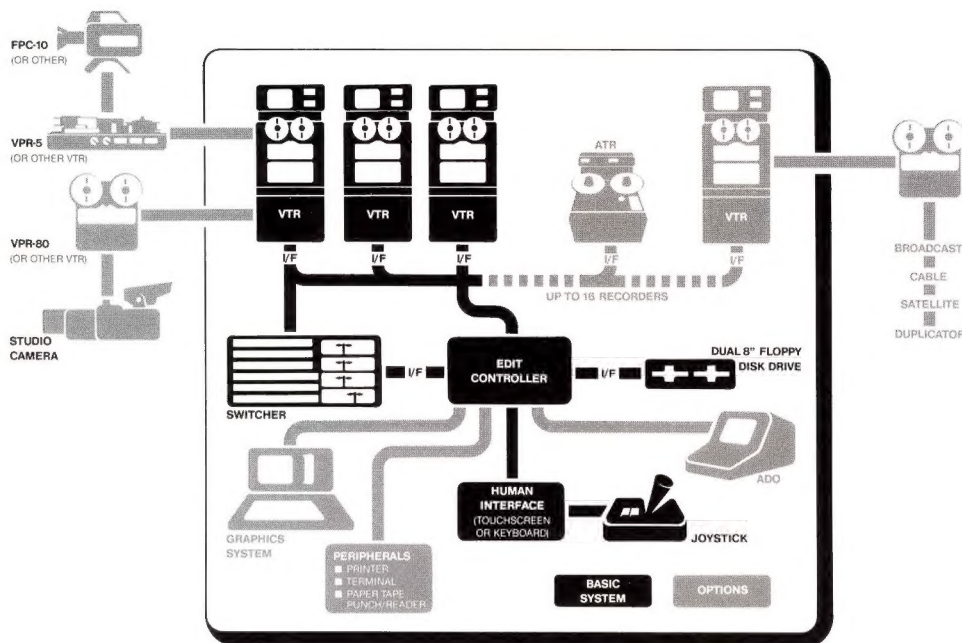
Because ACE is both software based and modular, it is a superior long-term investment. Software updates enhance the system's capabilities without making hardware obsolete. Modularity means that you start out with exactly what you need in the system and add options or accessories as you grow.

ACE is human-engineered to a high degree. Because individual editors have individual preferences and working styles, ACE offers a choice of human interfaces. The basic software has been tested and perfected by working editors, to insure that it meets "real world" requirements. And that's not all. You can even configure menus to suit your own needs.

ACE also offers the editor unsurpassed power over the entire array of equipment in the complete system. Using the joystick control, the editor can control the switcher, special effects and graphics systems as well as video and audio recorders.

In ACE, Ampex offers editors unsurpassed flexibility without technical constraints. You can put all your creative energies into the job without worry.





The Heart of the Creative Command Center

When ACE is the centerpiece of a system in which the major components are Ampex products, you're in charge of a Creative Command Center. Here is a post production system with unique benefits, as many users have found. A Creative Command Center puts ACE in control of an Ampex switcher, Ampex VTRs, perhaps our Emmy-award-winning Ampex Digital Optics (ADO) system. Now you have a system with unequalled compatibility. RS-422 serial communications and compatible software throughout make interface a smooth road instead of an obstacle.

There is enough flexibility in the concept of an Ampex Creative Command Center to satisfy any requirements. Select a switcher from the microprocessor-controlled Ampex AVC series, or from many models in the 4100 series, or choose ACE's Dedicated Editing Switcher. In VTRs, you can have the top of the line VPR-3 with its dazzling speed and tape handling features, or any of the many other types of Ampex 1-inch Type C VTRs in various price/performance categories, and our ARC-40 1/2" M-format machines. ADO comes in 1-, 2- and 4-channel systems with a wide choice of options and accessories. Add the peripheral products that you may need, such as a printer, terminal or paper tape punch/reader and — somewhere in there — is your ideal system. It's one that meets your requirements and your budget. And all the Ampex products are serviced and supported by a single manufacturer. Think of what that can mean to the smooth operation of your business!

Of course, ACE works with products of other manufacturers, too. RS-422 compatibility can smooth the way, and there's a General Purpose Interface (GPI) option that allows ACE to activate any product with an electronic "trigger."



TouchScreen: Single-finger Editing

The TouchScreen is a different kind of editing device, a state-of-the-art custom soft key system. Instead of keyboarding your inputs, you merely point your finger at an entry on the menu monitor. The software is based on the principle of "touch what you want to change or work on." It's quite easy to learn, and is based on the natural human instinct to point at things you want.

TouchScreen software is unique in the industry, and allows the editor every bit as much power and flexibility as either of the keyboard options.

The TouchScreen works on the principle of an infra-red beam grid which crisscrosses the entire surface of a 15-inch data monitor. As your finger gently touches a particular command displayed on the CRT, it breaks the grid. ACE instantly senses the location of your finger, compares it to the edit command position on the display, and executes the function or sequence.



TouchScreen



ASCII Keyboard

ASCII Keyboard

If you prefer a conventional typewriter-style command keyboard, ACE also offers that option, with a few features that more readily adapt it to video editing. The basic layout is that of any ASCII keyboard, but without the growth of intimidating "extra" keys common to other editing systems. There are also eight soft keys for expanded capabilities.

Joystick Control

The joystick is standard with every ACE system and complements the TouchScreen or keyboard. This is no ordinary joystick. First, it is a two-speed device when used as a transport control. You can shuttle tape in either direction, and at any speed, or control the tape transports in normal or slow-motion speeds. With helical VTRs, you can jog forward or jog reverse.

There is a Stop button conveniently located on top of the joystick, and another Stop button immediately to the left. The Mark Entry and Mark Exit buttons are in the same cluster.

The joystick is also your control of the switcher and ADO. To insert or assemble an effect from an Ampex switcher, you call for Switcher Preview and immediately the joystick is assigned to any M/E on the switcher that you have access to. Now, the joystick becomes, in effect, any of the fader arms or adjustments on the switcher. You can control pattern limits for wipes and dissolves, or control clip level, for example, all without going to the switcher itself.

ADO and ACE together give you an added element of synergism. After you program a sequence in ADO, you can call up ADO from ACE and the joystick becomes a time and duration controller. The position of the joystick between its extremes corresponds to the position in time of the sequence. So, if you start at one end of the joystick movement and move to the other end, you play back the sequence from beginning to end. And, since the ACE joystick can be moved at any speed, you can expand or compress the time of the sequence, or edit it.

These powerful combinations of human interface devices present editors with many opportunities for creative control and efficiency. Yet this is only a small part of the potential of an ACE system; there is much more in the software.

Control As You Like It

Because individual editors have their own preferences, ACE offers a choice of the human interface device that allows him or her to direct the system. Some feel comfortable with a keyboard, while others find that the TouchScreen option is faster and easier for them to operate. It really is your choice, because the inherent speed of ACE is so great that neither the editor or any other product in the system can outrun it. No matter how fast your mind can create ideas and your fingers can move, ACE will be ready waiting for you.

Dedicated Keyboard

For those people who feel more comfortable with a keyboard, there are two choices. The ACE dedicated keyboard features a logical, uncluttered layout that positions clusters of keys according to function and frequency of use. You can work on it with both hands at once for increased editing speed. It is highly efficient for both beginning and experienced editors.

Compared with other dedicated keyboards, the ACE keyboard has a modest number of buttons — each assigned to execute a specific function or sequence. These are supplemented by eight soft keys, to which you can assign and re-assign functions that suit your preferences or the specific job you're working on. Soft keys are programmable, so they speed up specialized editing tasks. They can be programmed to execute repetitive commands, saving many keystrokes.

The dedicated keyboard is available with an optional ASCII keyboard for edit comments. A small rollout keyboard can be installed into the base of the unit for convenience and economy of space, or a larger standalone unit is also available.



ACE Dedicated Keyboard



Joystick Module

ACE Software: The Power Behind The Screen

ACE software is tailored to whichever of the three human interface options you choose, TouchScreen, dedicated keyboard or ASCII keyboard. The manner in which data is displayed varies, but the inherent power and flexibility are the same.

One of the unique features of ACE software is the ability to configure menus to an editor's own preference. Needless to say, this is a popular feature. You can display as little or as much data as you want on your Edit Construction List (ECL) or Edit Decision List (EDL). You can see all the time code numbers, for example, or leave them out of the display. It makes no difference, because the system remembers everything. Should you need to change or re-format menus in the middle of a job you can do so. Everything you need to know is in memory and can be recalled.

Another unique feature, variable hardware configurations, allows the editor to quickly adapt to the machine requirements of any given job. If you need more VTRs or a different peripheral device or system for a particular job, you merely change the Hardware Configuration menu. You don't have to stop and physically connect or disconnect equipment.



TouchScreen Operation

TouchScreen menus are displayed in a manner that makes it easy for the editor to keep track of his or her place and move as quickly as desired from one instruction to another. Data is displayed "double-spaced" so there is plenty of room to point at an entry without confusing the system. Whenever numbers need to be entered, a keypad display appears. It is arranged much like a standard 10-key cluster on a keyboard. As soon as you are through with the keypad, it goes away. TouchScreen menus are uncluttered and take you logically through the normal editing functions.

Keyboard Menus

Menus for the dedicated and ASCII keyboards are displayed in the conventional single-spaced format,

with a cursor and displays for the soft keys as well. With programmable soft keys and menus that can be configured to individual tastes, an editor using an ACE system has a great deal of flexibility.

Interchangeability

All ACE menus are stored on disk, and are completely interchangeable with any other ACE system. It is quite possible for a job to be worked on by more than one editor, on more than one ACE system, with no difficulty whatsoever. Also, ACE can read and write CMX-format disks, which can mean added flexibility and revenue.

Software Update

Because ACE is a software-based system, updates are accomplished merely by exchanging disks, eliminating costly hardware or PROM replacement. Your basic investment in the ACE system is protected, and no productive time is lost.

ACE Hardware

The basic hardware in an ACE system includes the Edit Controller, dual 8-inch floppy disc drive, the human interface device (TouchScreen or keyboard with optional data monitor), joystick module, optional preview switcher and whatever machine interfaces (MIFs) are required. Other Options include the Dedicated Editing Switcher, General Purpose Interface, and various peripheral devices such as printers, terminals and paper tape punch/readers. Diagnostic options include a PROM-based microprocessor exerciser.

At the heart of the system is the edit controller, with its advanced, RAM-based LSI-11* computer family. The edit controller contains five standard control cards: the CPU, memory, character generator,

into the CPU on power-up; the other for storing edit decision lists and other pertinent notations. The second drive can also be used for making duplicates of valuable master disks.

A machine interface (MIF) is required for each machine that is controlled by the system, unless SMPTE interface is built into the machine, as in the case of the VPR-3, for example. Each MIF has a different configuration to meet the requirements of the machine it controls. MIFs are usually housed in small, rack-mountable chassis.

A Variety of Input/Output Peripherals

Edit decision lists and other data necessary for final program assembly can be output via a number of standard I/O peripherals. RS-232-C serial communications are available to allow ACE to interface with hard copy printers, terminals, paper tape punch/readers and other floppy disk units.

Investment Against Obsolescence

Your investment in an ACE system, or in a larger array of Ampex equipment in a complete post-production editing system, is a safe one for two very good reasons. Enhancements come in the form of updated software, and RS-422 serial communications make it possible to upgrade the entire system without changing interfaces. On the other hand, if you start with a small system and later add new and more sophisticated equipment, you can easily modify the software to accommodate the changes. ACE is a modular system that readily permits system growth and modification.

timing board, and floppy disk interface. There is room for ten additional intelligent line control cards (ILCs), for control of up to 20 peripheral devices.

One drive of the dual floppy disk drive is used for loading the editing program

ACE

SPECIFICATIONS

General

CPU—DEC LSI, 11/23
Number of machines: 16
Edit accuracy: frame accurate with time code
Power: 90-130 VAC, 200-265 VAC, 50-60 Hz

Transport Controls/Status

PLAY { SHUTTLE } via
STOP { PLAY VARIABLE } Joystick
F FWD JOG FWD
REWIND JOG RVS
RECORD CUE
LOOPING SEARCH
TSO READY ON/OFF
SPEED MEMORY

Machine status and position display
User-definable status positioning

Modes

Video
Audio 1
Audio 2
Audio 3
Any combination of above

Previews

Single machine: BVB
VBV
Multiple machine: VVV
BVB
VBV

Exit only previews
Preview switcher optional

Switcher Control

Up to three M/E amplifiers
Effects limits
Many features dependent on switcher used

Communications

RS-422 serial control to all interfaces
RS-232C serial control to I/O devices
(except floppies)
10 Ma current loop serial control to
AVR-3, EC-2
60 Ma current loop serial control to TTY
110 to 38.4 K Baud

Time Code Reader/Generator

May use TCR/G in VPR-2/2B, VPR-3, VPR-80
TC Gen: Jam slave in assembly
Set TC gen
Set user bits
Color phasing
Tape stripping

TC Reader: Tach-based
Updated by control track (if no
time code)
Updated by TC (if available)
User bit display
User bit editing

Edit Decision List

RIPPLE
MOVE
MERGE
DIRTY TAIL REMOVAL
AUTO TAG
INSERT
DELETE
COPY
USER DEFINABLE EDL DISPLAY
EDL OUTPUT: industry standard format
or Ampex standard.

Arithmetic

525 full and drop frame
625 full frame
Time code calculator
Time code entry, trimming

Input/Output

Floppy-based: Program storage
EDL storage
configuration files
8" floppies
Serial ports for: printer
paper tape reader/punch
teletype

Edits

Multiple record machines
Insert or Assembly
Replay
May operate as background task
Color Framing: Off
Record Only
All

Time code or tape position editing
Open-ended edits

Auto assembly

All or part of EDL
Sequential, look-ahead
May operate as a background task
Reel change warnings

Misc

Slow-motion synchronization (multiple
transports)
Sync rolls
Slaved transports
Operator aids: Prompts
Warnings

RAM-based interfaces
Reel number entry
Preroll, postroll times
Reaction times
Built-in Power-up diagnostics
uP exercisor capability

Human Interfaces

15-inch Touchscreen
Dedicated keyboard
ASCII keyboard
Joystick control units
15-inch data monitor
Aux. flat comments keyboard
Aux. stand alone comments keyboard

Physical

Machine interfaces:
1 $\frac{3}{4}$ " (4.45 cm) high rack mount with slides
Preview switcher:
1 $\frac{3}{4}$ " (4.45 cm) high rack mount with slides
Switcher interfaces:
Varies per switcher type
Edit controller:
7" (17.78 cm) high rack mount,
front accessible
Dual 8-inch floppy drives:
5 $\frac{1}{4}$ " (23.36 cm) high rack mount

Ampex reserves the right to make product
and specification changes at any time
without notice.

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Ampex Corporation, Audio-Video Systems Division

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